

What is claimed is:

1. A catheter shaft comprising:

a polymeric tubular member having a lumen extending the length therein, wherein the tubular member includes a pre-formed bend along a portion of the length of the tubular member, wherein the polymeric material forming at least a portion of the pre-formed bend includes a sufficient quantity of a nucleating agent dispersed therein.

2. The catheter shaft of claim 1, wherein the polymeric material is selected from the group consisting of polyamide, polyethylene terephthalate, polyetheretherketone, polyimide, polyetherimide and polyether block amide and mixtures thereof.

3. The catheter shaft of claim 1, wherein the nucleating agent is selected from the group consisting of talc, silica, kaolin, molybdenum disulfide, iron sulfide, titanium dioxide, sodium phenylphosphanate and mixtures thereof.

4. The catheter shaft of claim 1, wherein the nucleating agent is selected from the group consisting of sodium p-tert-butylbenzoate, monton wax, montanic ester salts, salts of monocarboxylic acids and polycarboxylic acids and mixtures thereof.

5. The catheter shaft of claim 1, wherein the nucleating agent is selected from the group consisting of an ethylene and an acrylic ester copolymer, a fumaric acid polymer, ethylene, propylene, 1,4-hexadiene, norbornadiene and mixtures thereof.

6. The catheter shaft of claim 1, wherein the nucleating agent is present in a concentration of about 0.01% to 1.0% by weight.

7. The catheter shaft of claim 1, wherein the catheter shaft is a portion of a guide catheter.

8. The catheter shaft of claim 1, wherein the catheter shaft is a portion of a vascular catheter.

9. The catheter shaft of claim 1, wherein the catheter shaft is a portion of a biliary catheter.

10. A catheter shaft comprising:

a tubular member having a lumen extending the length therein, wherein the tubular member further comprises at least two segments having differing rigidities, wherein at least one of the segments of the tubular member has a pre-formed bend extending over at least a portion of the length thereof which includes a polymer in a portion of said pre-formed bend having a sufficient quantity of a nucleating agent dispersed therein.

11. The catheter shaft of claim 10, wherein the polymeric material is selected from the group consisting of polyamide, polyethylene terephthalate,

polyetheretherketone, polyimide, polyetherimide and polyether block amide and mixtures thereof.

12. The catheter shaft of claim 10, wherein the nucleating agent is selected from the group consisting of talc, silica, kaolin, molybdenum disulfide, iron sulfide, titanium dioxide, sodium phenyl phosphanate and mixtures thereof.

13. The catheter shaft of claim 10, wherein the nucleating agent is selected from the group consisting of sodium p-tert-butyl benzoate, monton wax, montanic ester salts, salts of monocarboxylic acids and polycarboxylic acids and mixtures thereof.

14. The catheter shaft of claim 10, wherein the nucleating agent is selected from the group consisting of an ethylene and an acrylic ester copolymer, a fumeric acid polymer, ethylene, propylene, 1,4-hexadiene, norbornadiene and mixtures thereof.

15. The catheter shaft of claim 10, wherein the nucleating agent is present in a concentration of about 0.01% to about 1.0% by weight.

16. The catheter shaft of claim 10, wherein the catheter shaft is a portion of a guide catheter.

17. The catheter shaft of claim 10, wherein the catheter shaft is a portion of a vascular catheter.

18. The catheter shaft of claim 10, wherein the catheter shaft is a portion of a biliary catheter.

19. A process for improving curve retention in catheters having a pre-formed curve, the process comprising:

providing a polymeric material;

providing a nucleating agent;

admixing the nucleating agent with the polymeric material; and

extruding the admixed polymeric material and forming a catheter shaft having a pre-formed curve along a portion of the catheter shaft's length.

20. The process of claim 19, wherein the pre-formed curve is formed prior to cooling the extruded polymeric material, followed by cooling the pre-formed curve.

21. The process of claim 19, wherein the pre-formed curve is formed subsequent to cooling the extruded polymeric material in a further step comprising heating a portion of the catheter shaft and forming the pre-formed curve, followed by cooling.